

FIG. 1

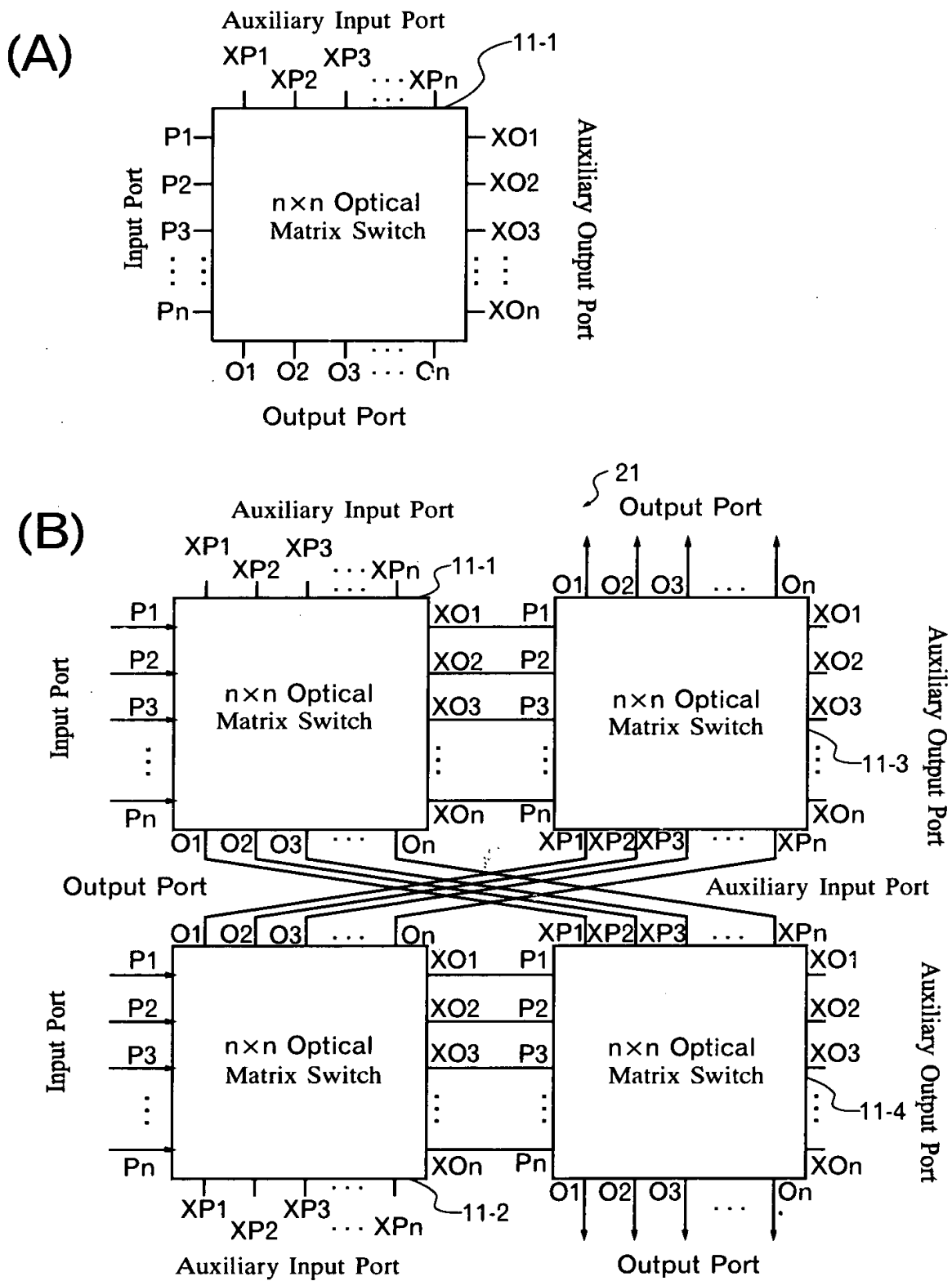


FIG. 2

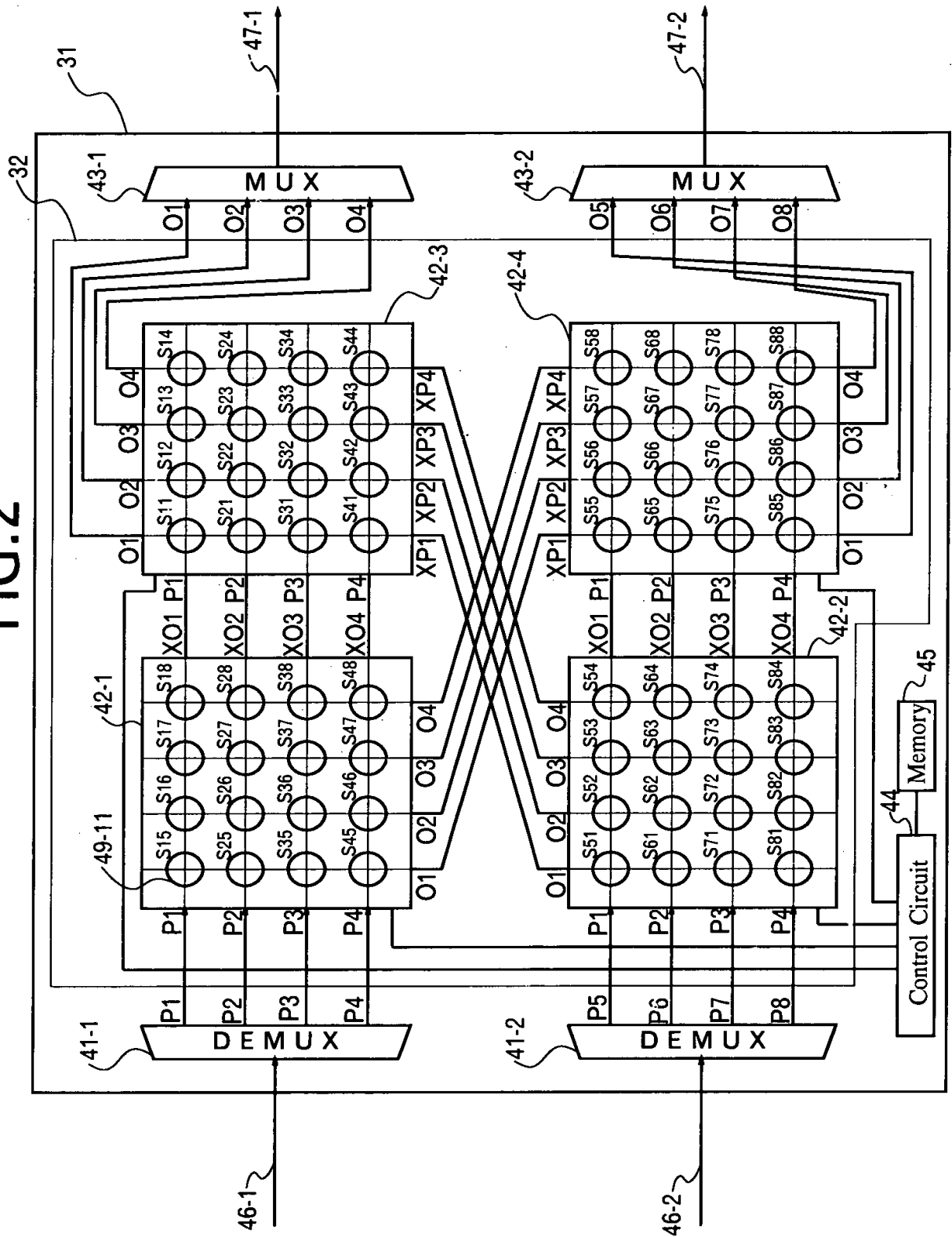


FIG. 3

| | | Column Number of Optical Switch Element | | | | | | | |
|--|---|---|-----|-----|-----|-----|-----|-----|-----|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Row Number of Optical Switch Element | 1 | S15 | S16 | S17 | S18 | S11 | S12 | S13 | S14 |
| | 2 | S25 | S26 | S27 | S28 | S21 | S22 | S23 | S24 |
| | 3 | S35 | S36 | S37 | S38 | S31 | S32 | S33 | S34 |
| | 4 | S45 | S46 | S47 | S48 | S41 | S42 | S43 | S44 |
| | 5 | S51 | S52 | S53 | S54 | S55 | S56 | S57 | S58 |
| | 6 | S61 | S62 | S63 | S64 | S65 | S66 | S67 | S68 |
| | 7 | S71 | S72 | S73 | S74 | S75 | S76 | S77 | S78 |
| | 8 | S81 | S82 | S83 | S84 | S85 | S86 | S87 | S88 |

FIG. 4

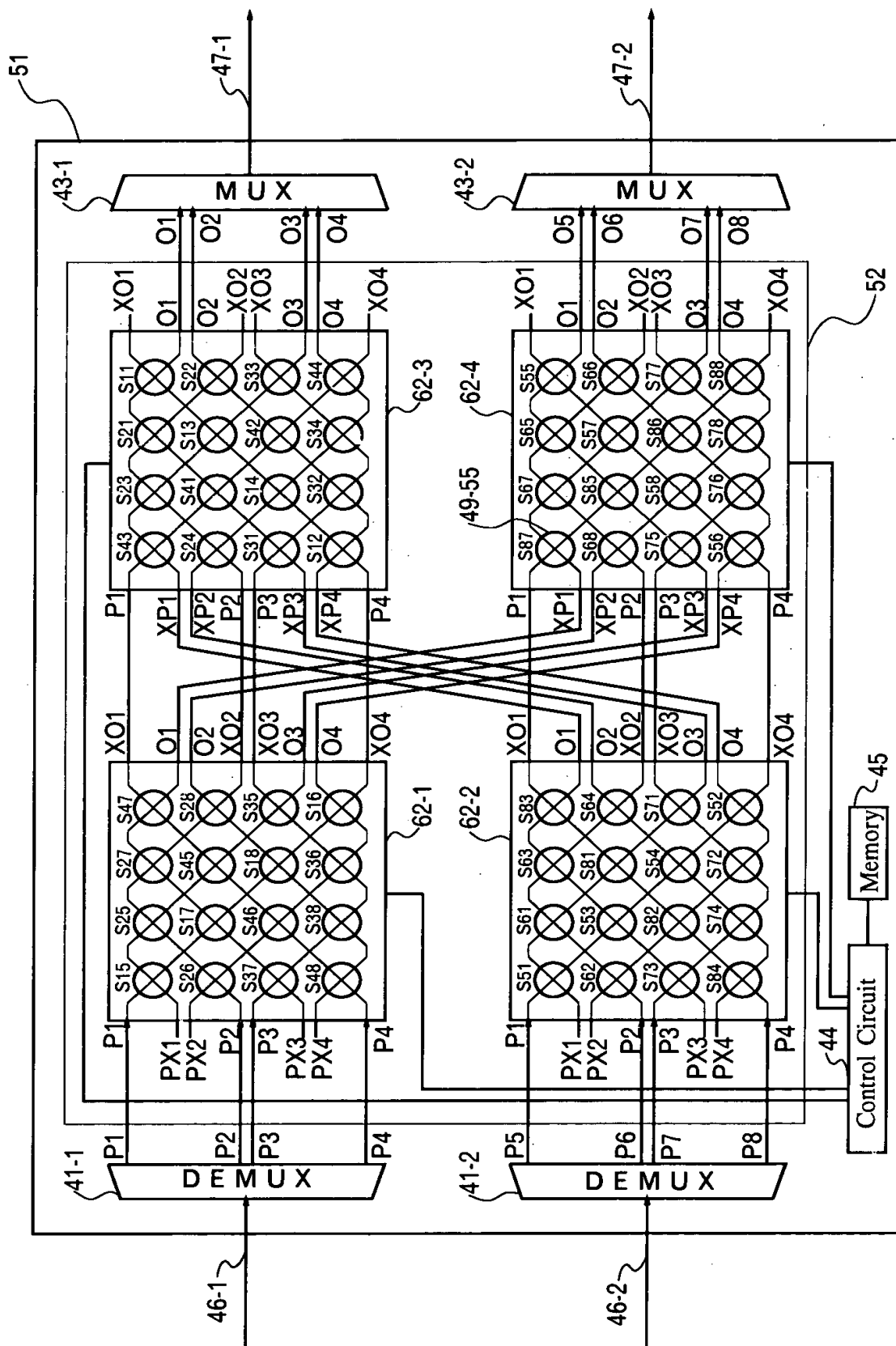
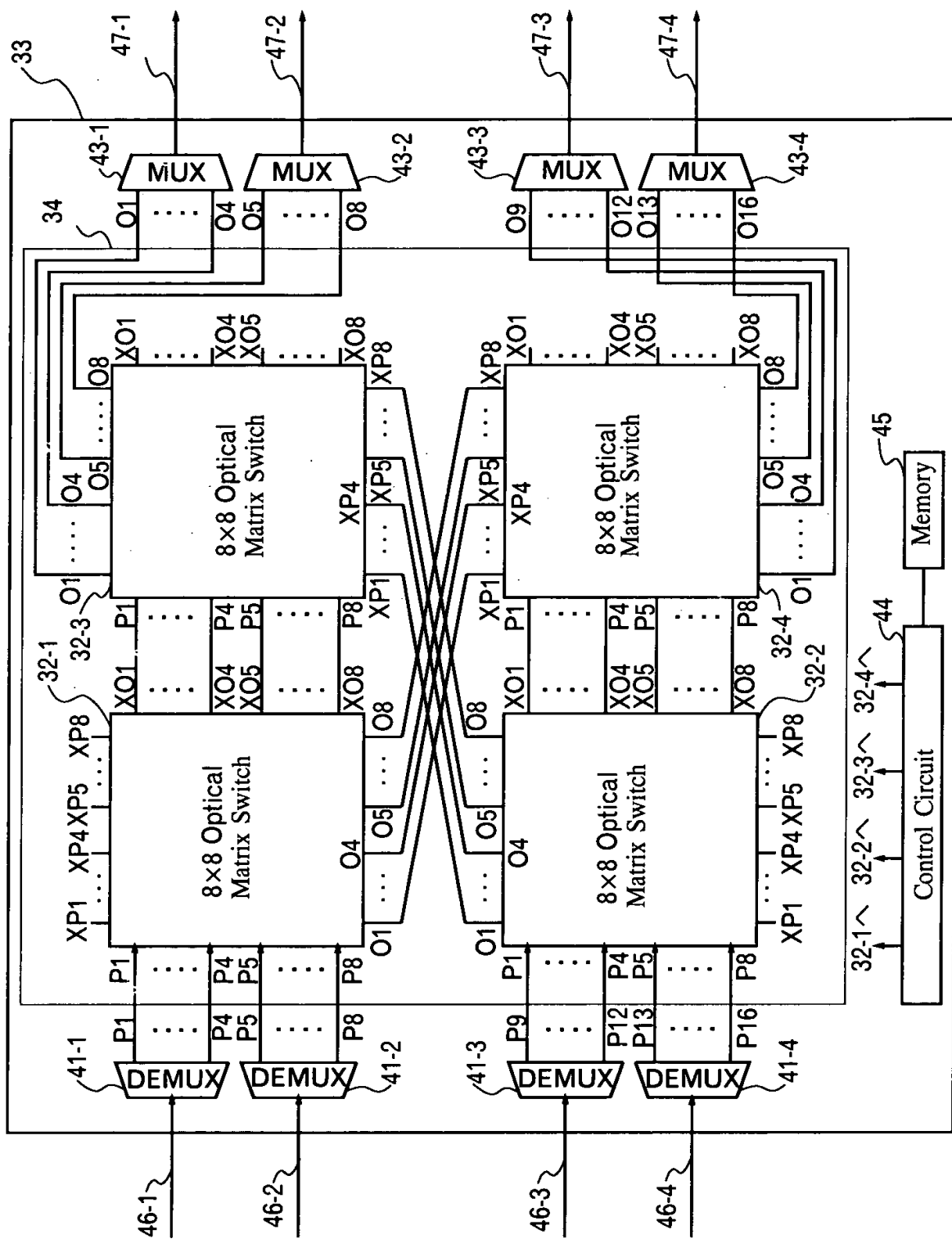
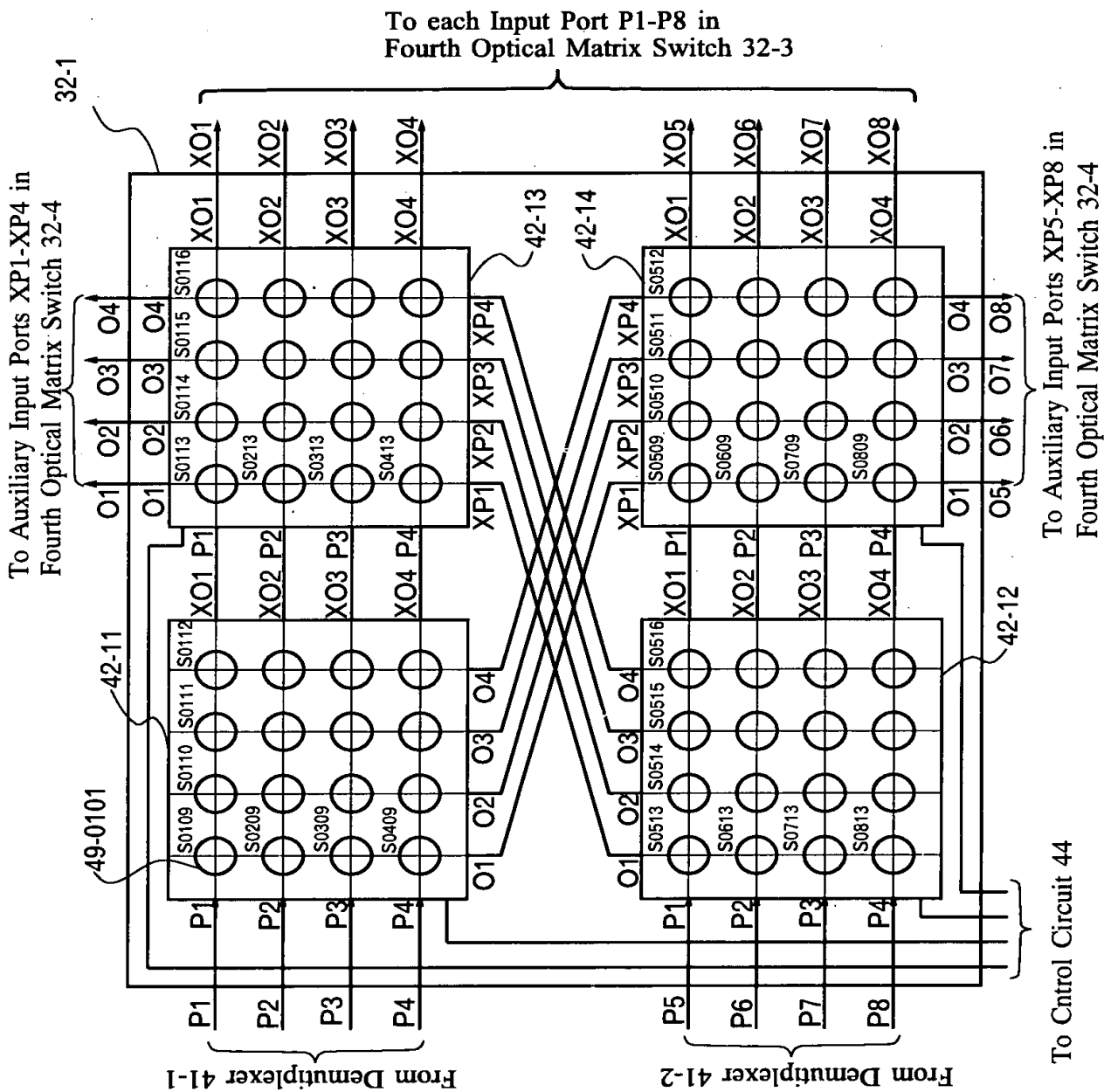


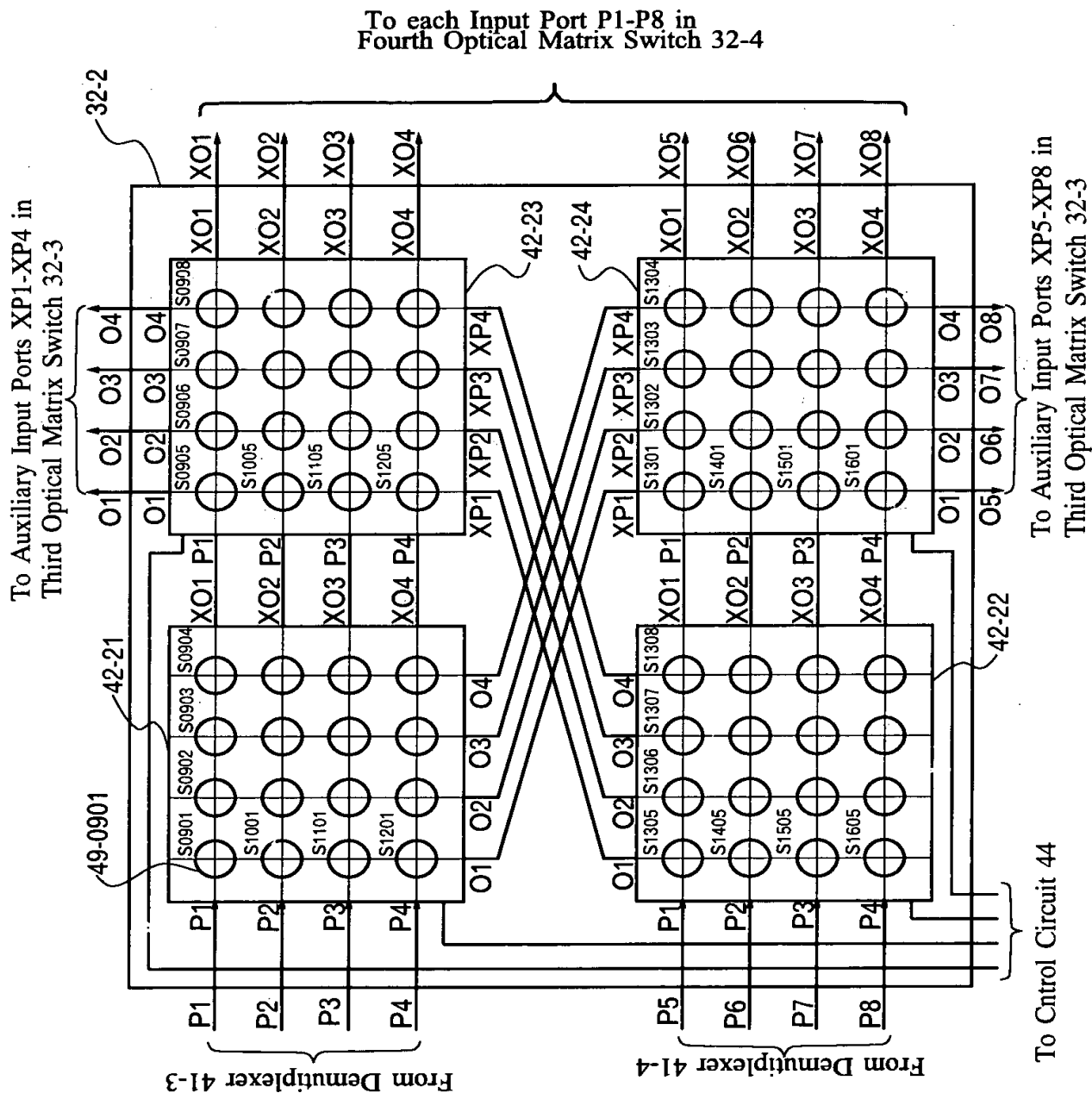
FIG. 5

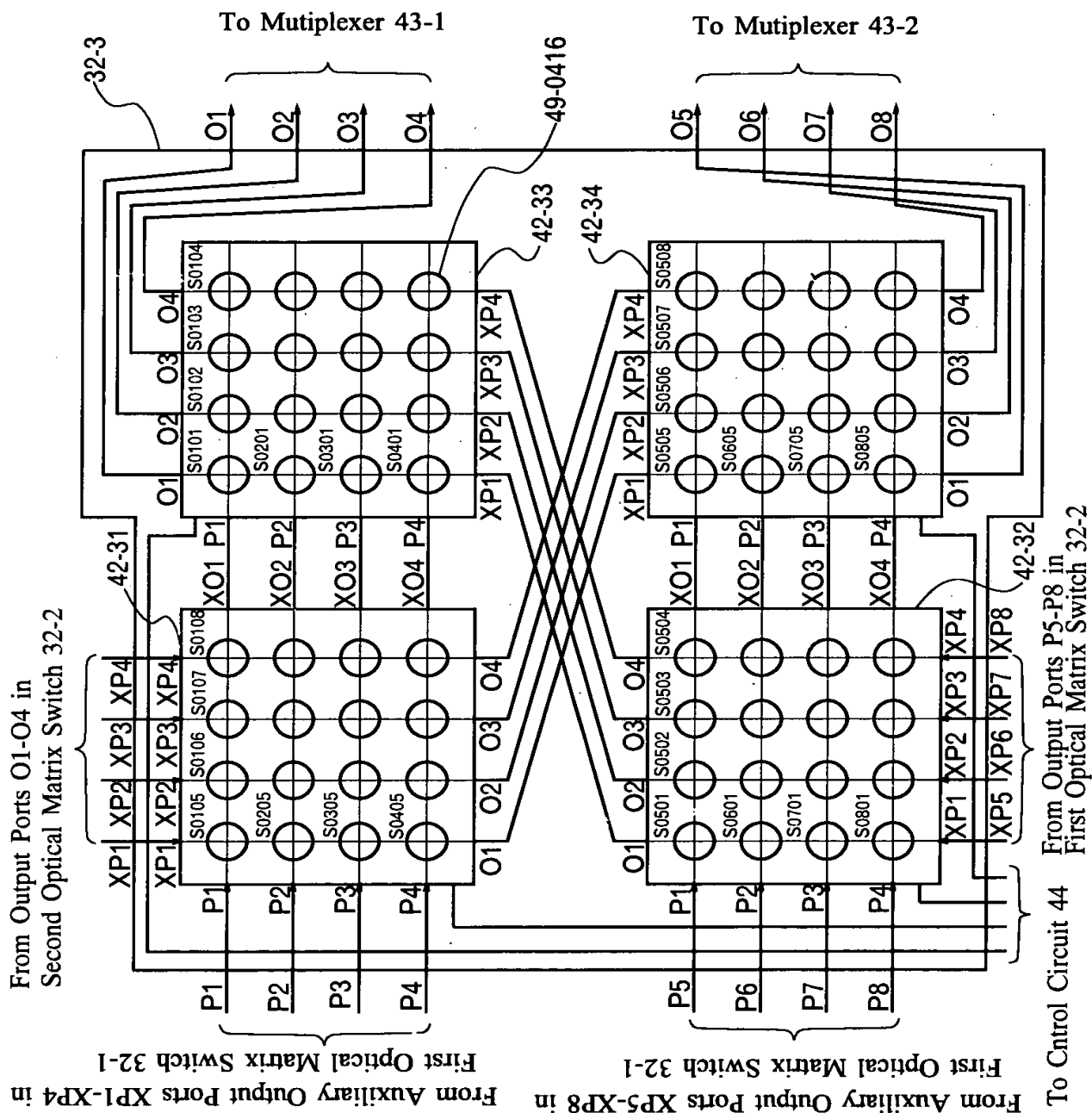
| | | Column Number of Optical Switch Element | | | | | | | |
|--------------------------------------|---|---|-----|-----|-----|-----|-----|-----|-----|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Row Number of Optical Switch Element | 1 | S15 | S25 | S27 | S48 | S43 | S23 | S21 | S11 |
| | 2 | S26 | S17 | S45 | S28 | S24 | S41 | S13 | S22 |
| | 3 | S37 | S46 | S18 | S35 | S31 | S14 | S42 | S33 |
| | 4 | S48 | S38 | S36 | S16 | S12 | S32 | S34 | S44 |
| | 5 | S51 | S61 | S63 | S83 | S87 | S67 | S65 | S55 |
| | 6 | S62 | S53 | S81 | S64 | S68 | S85 | S57 | S66 |
| | 7 | S73 | S82 | S54 | S71 | S75 | S58 | S86 | S77 |
| | 8 | S84 | S74 | S72 | S52 | S56 | S76 | S78 | S88 |

FIG. 6









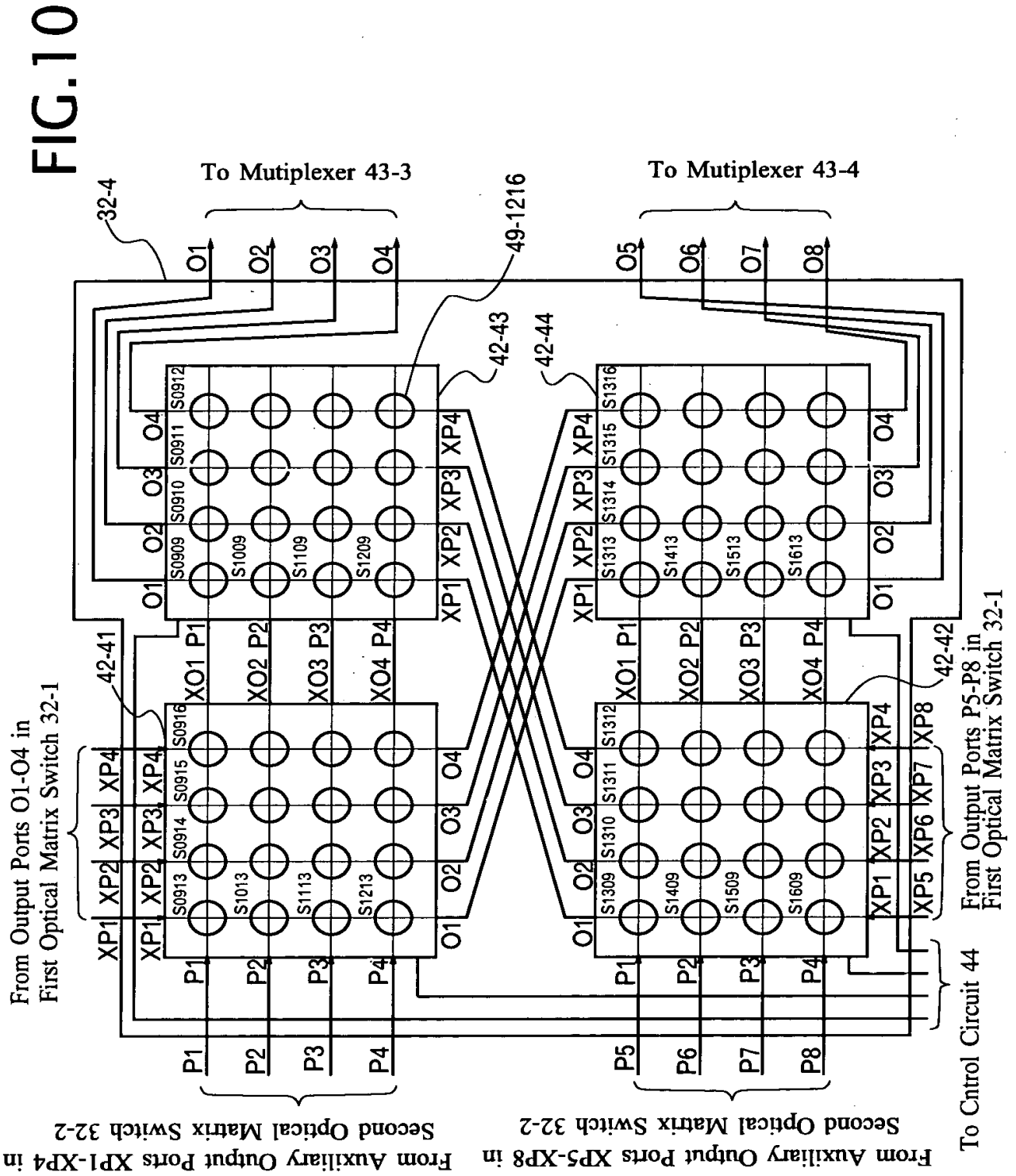


FIG. 11

| | | Column Number of Optical Switch Element | | | | | | | | | | | | | | | |
|--------------------------------------|----|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Row Number of Optical Switch Element | 01 | S0109 | S0110 | S0111 | S0112 | S0113 | S0114 | S0115 | S0116 | S0105 | S0106 | S0107 | S0108 | S0101 | S0102 | S0103 | S0104 |
| | 02 | S0209 | S0210 | S0211 | S0212 | S0213 | S0214 | S0215 | S0216 | S0205 | S0206 | S0207 | S0208 | S0201 | S0202 | S0203 | S0204 |
| | 03 | S0309 | S0310 | S0311 | S0312 | S0313 | S0314 | S0315 | S0316 | S0305 | S0306 | S0307 | S0308 | S0301 | S0302 | S0303 | S0304 |
| | 04 | S0409 | S0410 | S0411 | S0412 | S0413 | S0414 | S0415 | S0416 | S0405 | S0406 | S0407 | S0408 | S0401 | S0402 | S0403 | S0404 |
| | 05 | S0513 | S0514 | S0515 | S0516 | S0509 | S0510 | S0511 | S0512 | S0501 | S0502 | S0503 | S0504 | S0505 | S0506 | S0507 | S0508 |
| | 06 | S0613 | S0614 | S0615 | S0616 | S0609 | S0610 | S0611 | S0612 | S0601 | S0602 | S0603 | S0604 | S0605 | S0606 | S0607 | S0608 |
| | 07 | S0713 | S0714 | S0715 | S0716 | S0709 | S0710 | S0711 | S0712 | S0701 | S0702 | S0703 | S0704 | S0705 | S0706 | S0707 | S0708 |
| | 08 | S0813 | S0814 | S0815 | S0816 | S0809 | S0810 | S0811 | S0812 | S0801 | S0802 | S0803 | S0804 | S0805 | S0806 | S0807 | S0808 |
| | 09 | S0901 | S0902 | S0903 | S0904 | S0905 | S0906 | S0907 | S0908 | S0913 | S0914 | S0915 | S0916 | S0909 | S0910 | S0911 | S0912 |
| | 10 | S1001 | S1002 | S1003 | S1004 | S1005 | S1006 | S1007 | S1008 | S1013 | S1014 | S1015 | S1016 | S1009 | S1010 | S1011 | S1012 |
| | 11 | S1101 | S1102 | S1103 | S1104 | S1105 | S1106 | S1107 | S1108 | S1113 | S1114 | S1115 | S1116 | S1109 | S1110 | S1111 | S1112 |
| | 12 | S1201 | S1202 | S1203 | S1204 | S1205 | S1206 | S1207 | S1208 | S1213 | S1214 | S1215 | S1216 | S1209 | S1210 | S1211 | S1212 |
| | 13 | S1305 | S1306 | S1307 | S1308 | S1301 | S1302 | S1303 | S1304 | S1309 | S1310 | S1311 | S1312 | S1313 | S1314 | S1315 | S1316 |
| | 14 | S1405 | S1406 | S1407 | S1408 | S1401 | S1402 | S1403 | S1404 | S1409 | S1410 | S1411 | S1412 | S1413 | S1414 | S1415 | S1416 |
| | 15 | S1505 | S1506 | S1507 | S1508 | S1501 | S1502 | S1503 | S1504 | S1509 | S1510 | S1511 | S1512 | S1513 | S1514 | S1515 | S1516 |
| | 16 | S1605 | S1606 | S1607 | S1608 | S1601 | S1602 | S1603 | S1604 | S1609 | S1610 | S1611 | S1612 | S1613 | S1614 | S1615 | S1616 |

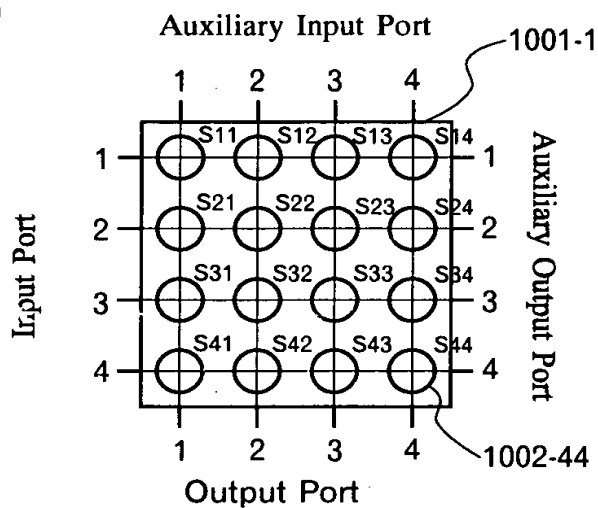
FIG.12

| | | Column Number of Optical Switch Element | | | | | | | | | | | | | | | |
|--------------------------------------|----|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Row Number of Optical Switch Element | | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| | | 01 | S0109 | S0209 | S0211 | S0411 | S0415 | S0215 | S0213 | S0113 | S0105 | S0205 | S0207 | S0407 | S0403 | S0203 | S0201 |
| | 02 | S0210 | S0111 | S0409 | S0212 | S0216 | S0413 | S0115 | S0214 | S0206 | S0107 | S0405 | S0208 | S0204 | S0401 | S0103 | S0202 |
| | 03 | S0311 | S0410 | S0112 | S0309 | S0313 | S0116 | S0414 | S0315 | S0307 | S0406 | S0108 | S0305 | S0301 | S0104 | S0402 | S0303 |
| | 04 | S0412 | S0312 | S0310 | S0110 | S0114 | S0314 | S0316 | S0416 | S0408 | S0308 | S0306 | S0106 | S0102 | S0302 | S0304 | S0404 |
| | 05 | S0513 | S0613 | S0615 | S0815 | S0811 | S0611 | S0609 | S0509 | S0501 | S0601 | S0603 | S0803 | S0807 | S0607 | S0605 | S0505 |
| | 06 | S0614 | S0515 | S0813 | S0616 | S0612 | S0809 | S0511 | S0610 | S0206 | S0503 | S0801 | S0604 | S0608 | S0805 | S0507 | S0606 |
| | 07 | S0715 | S0814 | S0516 | S0713 | S0709 | S0512 | S0810 | S0711 | S0703 | S0802 | S0504 | S0701 | S0705 | S0508 | S0806 | S0707 |
| | 08 | S0816 | S0716 | S0714 | S0514 | S0510 | S0710 | S0712 | S0812 | S0804 | S0704 | S0702 | S0502 | S0506 | S0706 | S0708 | S0808 |
| | 09 | S0901 | S1001 | S1003 | S1203 | S1207 | S1007 | S1005 | S0905 | S0913 | S1013 | S1015 | S1215 | S1211 | S1011 | S1009 | S0909 |
| | 10 | S1002 | S0903 | S1201 | S1004 | S1008 | S1205 | S0907 | S1006 | S1014 | S0915 | S1213 | S1016 | S1012 | S1209 | S0911 | S1010 |
| | 11 | S1103 | S1202 | S0904 | S1101 | S1105 | S0908 | S1206 | S1107 | S1115 | S1214 | S0916 | S1113 | S1109 | S0912 | S1210 | S1111 |
| | 12 | S1204 | S1104 | S1102 | S0902 | S0906 | S1106 | S1108 | S1208 | S1216 | S1116 | S1114 | S0914 | S0910 | S1110 | S1112 | S1212 |
| | 13 | S1305 | S1405 | S1407 | S1607 | S1603 | S1403 | S1401 | S1301 | S1309 | S1409 | S1411 | S1611 | S1615 | S1415 | S1413 | S1313 |
| | 14 | S1406 | S1307 | S1605 | S1408 | S1404 | S1601 | S1303 | S1402 | S1410 | S1311 | S1609 | S1412 | S1416 | S1613 | S1315 | S1414 |
| | 15 | S1507 | S1606 | S1308 | S1505 | S1501 | S1304 | S1602 | S1503 | S1511 | S1610 | S1312 | S1509 | S1513 | S1316 | S1614 | S1515 |
| | 16 | S1608 | S1508 | S1506 | S1306 | S1302 | S1502 | S1504 | S1604 | S1612 | S1512 | S1510 | S1310 | S1314 | S1514 | S1516 | S1616 |

FIG.13

Prior Art

(A)



(B)

